AMENDMENT TO THE CLAIMS:

Claims 1-19 (cancelled)

Claim 20. (Re-presented – formerly claim # 1) : A coated substrate, comprising:

a fired-on coating disposed on a surface of the substrate, the substrate being selected from the group consisting of glass, ceramic, plastic and metal, or the fired-on coating disposed on a surface of a glazed or enamelled substrate, wherein the coating comprises:

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a plurality of structure-forming particles arranged in the coating so that at least a portion of the plurality of particles protrude outwardly from a surface of the coating to form a coating surface structure that is at least partly hydrophobic on the coating surface, and wherein the structure-forming particles have an average diameter of less than 100 nanometers (nm).

Claim 21. (Re-presented – formerly claim # 2) : The substrate as defined in claim 1, wherein the structure-forming particles have an average diameter in a range of from at least 5 nanometers (nm) to less than 50 nanometers (nm).

Claim 22. (Re-presented – formerly claim # 3) : The substrate as defined in claim 1, wherein the structure-forming particles are formed of a material selected from the group consisting of metal oxides, mixed oxides, silicates, sulfates, phosphates, borates, carbon blacks, metal powders, metal sulfides,

selenides, sulfoselenides and oxosulfides, metal nitrides and oxide-nitrides and organic polymers.

Claim 23. (Re-presented – formerly claim # 4) : The substrate as defined in claim 1, wherein the structure-forming particles are formed of metal oxides selected from the group consisting of SiO_2, TiO_2, Al_2O_3, ZrO_2 and SnO_2, and pyrogenically prepared oxides thereof.

Claim 24. (Re-presented – formerly claim # 6) : A coated substrate, comprising:

a coating disposed on a surface of a glass, ceramic, plastic or metal substrate, or disposed on a glazed or enamelled substrate, wherein the coating comprises:

structure-forming particles which form a surface structure that is at least partly hydrophobic, and the structure-forming particles have an average diameter of less than 100 nanometers (nm); and

the coating further comprises an inorganic or organic layer-forming material operable to bind the structure-forming particles to the substrate surface, the layer-forming material is a glass or a material operable to form Me-O-Me' structural elements, wherein Me and Me' are identical or different from each other and are selected from the group consisting of B, Si, Al, P, Ti, Sn and Zr.

Claim 25. (Re-presented – formerly dependent claim # 7) : A coated substrate, comprising:

a coating disposed on a glass, ceramic, plastic or metal substrate, or disposed on a glazed or enamelled substrate, the coating comprising nanoscale structure-forming particles that form a surface structure that is at least partly hydrophobic, and the nanoscale structure-forming particles have an average diameter of less than 100 nm, and

the coating further comprising an inorganic or organic layer-forming material that binds the structure-forming particles to the substrate; and

the coating further comprises micro-scale structure-forming particles having an average diameter in a range of from about 0.1 micrometers (μm) to about 50 micrometers μm, the micro-scale structure-forming particles being contained in a same first layer as the nanoscale particles, or in an optional second layer that is disposed underneath the first layer, whereby the micro-scale structure-forming particles support the nanoscale structure-forming particles that are disposed thereon.

Claim 26. (Re-presented – formerly claim # 8) : The substrate as defined in claim 25, wherein the nanoscale structure-forming particles and the layer-forming material are together present in the coating in a weight ratio in the range from 100 : 1 of structure-forming particles to layer-forming material to 1 : 2 of structure-forming particles to layer-forming material.

Claim 27. (Re-presented – formerly claim # 9) : The substrate as defined in claim 25, wherein the substrate is formed of glass or plastic.

Claim 28. (Re-presented – formerly claim # 10) : The substrate as defined in claim 27, wherein the substrate is glass and the coated substrate is substantially transparent.

Claim 29. (Re-presented – formerly claim # 12) : A composition for use on a substrate, the substrate comprising glass, ceramic, plastic or metal, or the substrate being a glazed or enamelled substrate, the composition comprising:

a plurality of particles operable to form a surface structure that is at least partly superficially hydrophobic, the structure-forming particles have an average diameter of less than 100 nanometers (nm); and

a layer-forming particulate or liquid material that is present in a weight ratio in a range of from about 100 : 1 to about 1 : 2 of layer forming material to particles,

the layer-forming material comprising a glass frit, a glass raw material, or a combination thereof, which, respond to firing by forming a glass or vitreous structure that binds one another; or/and with groups of the substrate; or/and with groups of the structure-forming particles which themselves are capable of glass formation in response to firing.

Claim 30. (Re-presented – formerly claim # 13) : The composition as defined in claim 29, wherein the structure-forming particles are a suspension in a liquid medium prior to firing.

Claim 31. (Re-presented – formerly claim # 14) : The composition as defined in claim 29, wherein the structure-forming particles have a particle

diameter of less than 50 nanometers (nm) but at least 5 nanometers (nm), and the layer-forming material is selected from the group consisting of B_2O_3, Bi_2O_3, alkali metal oxides, zinc oxides and lead oxides and borates, silicates and phosphates, and glass frit that melts below 650 °C.

Claim 32. (Re-presented – formerly claim # 15) : The composition as defined in claim 31, wherein the composition comprises from 1 wt.% to 10 wt.% pyrogenic silica (SiO_2) and from 0.1 wt.% to 2 wt.% of a material selected from the group consisting of boric acid (B_2O_3), alkali metal phosphate, ammonium dihydrogen phosphate, di-alkali metal phosphate, diammonium hydrogen phosphate, and glass frit that melts below 600 °C, and the composition further comprises a printing medium.

Claim 33. (Re-presented – formerly claim # 16) A process for the production of a substrate with at least one self-cleaning surface, comprising:

(i) coating a surface of the substrate with a composition comprising structure-forming particles and an inorganic or organometallic layer-forming material, wherein the structure-forming particles have an average diameter in a range of from about 50 nanometers (nm) to about 5 nanometers (nm)

(ii) firing the composition to form a cohesive layer from the composition which fixes the structure-forming particles to the substrate and forms a structured surface, and

(iii) hydrophobizing the structured surface formed.

Claim 34. (Re-presented – formerly depedent claim # 17) : A process for producing a substrate, comprising:

selecting a substrate from the group consisting of glass substrate, ceramic substrate, plastic substrate, metal substrate, and glazed or enamelled substrate, the substrate having a micro-rough surface formed thereon by a first coating, the first coating comprising structure-forming micro-scale particles with an average particle diameter in a range of from about 1 micrometers to about 100 micrometers and a binder affixing the structure-forming micro-scale particles to the selected substrate, the binder being formed from glass frit or glass-forming raw material;

disposing on a surface of the first coating a second coating comprising structure-forming nanoscale particles with an average particle diameter of less than about 10 nm and an inorganic or organic layer-forming material, the layer-forming material being responsive to firing by affixing the structure-forming nanoscale particles a surface of the first coating;

firing the second coating to form a cohesive layer which affixes the structure-forming nanoscale particles to the surface of the first coating; and

hydrophobizing a surface of the second coating.

Claim 35. (Re-presented – formerly claim # 18) : The process as defined in claim 33, wherein the composition used to form the surface structure is applied in a liquid to paste-like consistency by means of a printing process, by spraying, brushing, pouring or dipping.

Claim 36. (Re-presented – formerly independent claim # 19) : A glass pane for vehicles and windows, construction glass, ceramic tiles, roof tiles, covers on photovoltaic solar cells, metal profiles or lacquered substrates having a self-cleaning surface, wherein the self-cleaning surface has a contact angle of greater than about 150 degrees and an off rolling angle of less than about 1 degree.

Claim 37. (New) : A coating for use on a surface of a substrate, comprising:

a plurality of nanoscale particles; and

a vitreous binder that responds to firing by affixing the plurality of nanoscale particles to the substrate surface, whereby portions of the plurality of nanoscale particles extend outward from a surface of the coating to create a nanoscale rough coating surface.

Claim 38. (New) : The coating as defined in claim 37, wherein the binder is glass frit having a melt point that is lower relative to both the plurality of nanoscale particles and to the substrate.

Claim 39. (New) : The coating as defined in claim 37, wherein the binder comprises an oxidic raw material or a glass precursor, the oxidic raw material and the glass precursor being selected from the group consisting of boric acid, bismuth oxide, alkali metal oxide, alkaline earth metal oxide, alkali metal silicate, zinc oxide, lead oxide, phosphate and borate.

Claim 40. (New) : The coating as defined in claim 37, wherein the binder comprises an organometallic compound comprising an element selected from the group consisting of boron, aluminum, titanium and zirconium, and the organometallic compound further comprises a moiety selected from the group consisting of alkoxy, acetyl and acetylacetonate.